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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/042,585	01/09/2002	Joseph W. Niesen	7784-000328	6625

27572 7590 02/04/2005

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EXAMINER	
PHILPOTT, JUSTIN M	

ART UNIT	PAPER NUMBER
2665	

DATE MAILED: 02/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/042,585	NIESEN, JOSEPH W.	
	Examiner	Art Unit	
	Justin M Philpott	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 May 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 27, 2004 has been entered.

Response to Arguments

2. Applicant's arguments filed May 27, 2004 have been fully considered but they are not persuasive.

3. Specifically, applicant argues that Vanderaar in view of Gilhousen does not "show or suggest transmitting a forward link containing *entire* first and second IP packets modulated using *first and second VLO codes* such that a *first and second transceiver* are operated *approximately at saturation points*" (page 8) (emphasis added).

4. However, as discussed in the previous office action, and discussed further in the following action, Gilhousen teaches using first and second VLO codes for operations by first and second transceivers (e.g., see col. 9, lines 41-55 regarding selecting codes of varying lengths based on the desired rate).

5. Additionally, regarding the newly recited claim limitation of operation "approximately at saturation points", the passage in applicant's specification which supports this limitation states

that a preferred mode is "near its saturation point of amplification using constant amplitude modulation techniques" (specification, paragraph 0051). Accordingly, by teaching modulation is performed by QPSK, Vanderaar also provides operation "approximately at saturation points" (e.g., see paragraph 0035 regarding QPSK).

6. Finally, with respect to the new claim limitation of the forward link containing "entire" first and second IP packets, Vanderaar also implicitly provides for such a limitation by teaching an IP packet having a payload field ranging from 644 to 15208 bits (e.g., see paragraphs 0037-0038). As is well known in the art, an IP packet according to IPv4 comprises a payload having a minimum size of 576 bytes; alternatively, an IP packet according to IPv6 comprises a payload having a minimum size of 1280 bytes (e.g., see the articles by Lee et al. entitled, "The Internet Protocol version 6", IEEE April 1998, and "The Next Generation of the Internet: Aspects of the Internet Protocol Version 6", IEEE January 1998, included in the attached PTO-892 "Notice of References Cited"). Thus, by teaching a payload comprises up to 15208 bits, Vanderaar is clearly adapted to transmit a forward link containing an *entire* IP packet comprising a payload of, e.g., 576 or 1280 bytes (i.e., 4608 or 10240 bits, well within the range of 644 to 15208 bits in Vanderaar). Thus, for these reasons and reasons further discussed in the following office action, Vanderaar in view of Gilhousen teach the new recited limitations of applicant's claims. Accordingly, applicant's arguments are not persuasive.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent App. Pub. No. 2002/0018527 A1 by Vanderaar et al. in view of U.S. Patent No. 5,751,761 to Gilhousen.

Regarding claims 1, 16, 19 and 33, Vanderaar teaches a communication system for mobile platforms, comprising: a first mobile platform including a first transceiver that is assigned a first IP address and a second mobile platform including a second transceiver that is assigned a second IP address (e.g., see paragraphs 0006 and 0007 regarding an application for a system having a plurality of mobile users accessing the Internet via satellite communication packet-based systems wherein the users each have a unique identification number derived via conventional methods, implicitly including IP addresses); a ground station (e.g., satellite hub, see paragraph 0025) adapted to transmit a forward link that contains an entire first and second packet (e.g., see paragraphs 0037-0038 regarding an IP packet payload comprising up to 15208 bits, wherein IPv4 or IPv6 packets are well known in the art to comprise minimum payloads of 4608 or 10240 bits, respectively) that is modulated by an orthogonal spreader (e.g., see paragraph 0021 regarding OFDM implicitly comprising an orthogonal spreader), wherein transceivers are operated approximately at a saturation point of amplifiers (e.g., see paragraph 0035 regarding modulation performed by QPSK); and a satellite that relays the forward link from the ground station to the first and second mobile platforms (e.g., see paragraph 0008). Furthermore, Vanderaar teaches adjusting operating parameters for the link according to link conditions (e.g., see FIG. 2 and paragraph 0024).

However, Vanderaar may not specifically disclose the adjusting operating parameters comprises adjusting the length of first and second orthogonal codes via a variable length orthogonal spreader wherein first and second IP packet data have different information data rates.

Gilhousen teaches applications for mobile communication systems such as that of Vanderaar, and specifically, teaches modulating by a variable length orthogonal spreader (e.g., see col. 3, lines 10-18; col. 8, lines 38-44; col. 9, line 41 – col. 11, line 62; and col. 19, lines 61-65) and packet data have different information data rates (e.g., see col. 3, lines 5-8). Further, Gilhousen teaches the VLO spreader uses first and second VLO codes for operations by first and second transceivers (e.g., see col. 9, lines 41-55 regarding selecting codes of varying lengths based on the desired rate). The teachings of Gilhousen provide a technique for enabling orthogonal coexistence of high and low data rate communications for increased system efficiency (e.g., see col. 2, line 45 – col. 3, line 30). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the teachings of Gilhousen to the system of Vanderaar in order to enable orthogonal coexistence of high and low data rate communications for increased system efficiency.

Regarding claims 2 and 20, Gilhousen teaches organizing groups of packets based on the information data rate by assigning data to specific sequence codes in accordance with their data rates (e.g., see col. 11, lines 29-62). As discussed above, the teachings of Gilhousen provide a technique for enabling orthogonal coexistence of high and low data rate communications for increased system efficiency (e.g., see col. 2, line 45 – col. 3, line 30). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the teachings of

Gilhousen to the system of Vanderaar in order to enable orthogonal coexistence of high and low data rate communications for increased system efficiency.

Regarding claims 3, 7, 21 and 25, Gilhousen teaches forward error correction encoding and decoding is performed (e.g., see col. 9, lines 17-29 and col. 18, lines 54-64). As discussed above, the teachings of Gilhousen provide a technique for enabling orthogonal coexistence of high and low data rate communications for increased system efficiency (e.g., see col. 2, line 45 – col. 3, line 30). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the teachings of Gilhousen to the system of Vanderaar in order to enable orthogonal coexistence of high and low data rate communications for increased system efficiency.

Regarding claims 4-6 and 22-24, Gilhousen further teaches a PN spreader spreads an output of the VLO spreader (e.g., see col. 8, lines 38-48) and a VLO despreader and PN despreader despreads data received (e.g., see col. 18, lines 39-53 regarding diversity combiner and decoder circuitry). As discussed above, the teachings of Gilhousen provide a technique for enabling orthogonal coexistence of high and low data rate communications for increased system efficiency (e.g., see col. 2, line 45 – col. 3, line 30). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the teachings of Gilhousen to the system of Vanderaar in order to enable orthogonal coexistence of high and low data rate communications for increased system efficiency.

Regarding claims 8 and 26, Vanderaar teaches an improved system for selecting parameters to optimize specific desired link margins (e.g., see paragraphs 0006-0008), however, may not specifically disclose selecting first and second VLO spreading codes. Gilhousen teaches

selecting a first and second VLO spreading code to optimize a first and second link margin elements (e.g., data rates) of first and second transceivers, respectively (e.g., see col. 9, lines 41-55 regarding selecting codes of varying length based on the desired data rate). As discussed above, the teachings of Gilhousen provide a technique for enabling orthogonal coexistence of high and low data rate communications for increased system efficiency (e.g., see col. 2, line 45 – col. 3, line 30). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the teachings of Gilhousen to the system of Vanderaar in order to enable orthogonal coexistence of high and low data rate communications for increased system efficiency.

Regarding claims 9, 10, 12-14, 27, 28, 30 and 31, Vanderaar teaches transceivers include a feedback circuit (e.g., shown generally at 200, 202, 204 and 206 in FIG. 2) that generates a link margin estimate for the IP packets received by the transceivers and ground station receives link margin estimates (e.g., at 208) and adjusts information parameters of subsequent IP packets (e.g., at 210). As discussed above, while Vanderaar may not specifically disclose adjusting specifically data rates or VLO spreading codes, Gilhousen teaches selecting VLO spreading codes in accordance with selected data rates (e.g., see col. 9, lines 41-55 regarding selecting codes of varying length based on the desired data rate). Further, as discussed above, the teachings of Gilhousen provide a technique for enabling orthogonal coexistence of high and low data rate communications for increased system efficiency (e.g., see col. 2, line 45 – col. 3, line 30). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the teachings of Gilhousen to the system of Vanderaar, whereby information data rates are adjusted in response to received link margin estimates, in order to enable orthogonal

coexistence of high and low data rate communications for increased system efficiency. Further, regarding claims 14 and 31, Gilhousen teaches FEC coding may be implemented (e.g., see col. 9, lines 17-29) and while Gilhousen may not specifically disclose specifically FEC coding is adjusted to optimize link margins, Vanderaar in view of Gilhousen teach adjusting coding to optimize link margins as discussed above. Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to adjust the FEC coding of Gilhousen in view of Vanderaar in view of Gilhousen teaching adjusting coding to optimize link margins.

Regarding claims 11 and 29, while Vanderaar in view of Gilhousen may not specifically disclose feedback information includes specifically a bit energy signal and a noise estimate signal, these claims were rejected in the previous office action by the Examiner taking official notice that the limitations recited in these claims are well known in the art. That is, detecting and transmitting signals comprising bit energy and noise estimate is well known in the art of mobile communications. In Applicant's response to the previous office action, Applicant has not traversed the Examiner's assertion of official notice or Applicant's traverse is not adequate. Therefore, in accordance with MPEP 2144.03(C), the limitations recited in these claims comprise well-known art and are hereafter taken to be admitted prior art. Accordingly, at the time of the invention it would have been obvious to one of ordinary skill in the art for the feedback information to include a bit energy signal and a noise estimate signal since detecting and transmitting signals comprising bit energy and noise estimate is well known in the art of mobile communications.

Regarding claims 15 and 32, Gilhousen teaches the VLO despreader responds to VLO timing sequence data contained in an overhead portion of an output of the PN despreader (e.g.,

see col. 17, line 65 – col. 18, line 64 regarding timing and sequence control signals). As discussed above, the teachings of Gilhousen provide a technique for enabling orthogonal coexistence of high and low data rate communications for increased system efficiency (e.g., see col. 2, line 45 – col. 3, line 30). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the teachings of Gilhousen to the system of Vanderaar, whereby information data rates are adjusted in response to received link margin estimates, in order to enable orthogonal coexistence of high and low data rate communications for increased system efficiency.

Regarding claims 17 and 34, Vanderaar teaches the forward link includes broadcast frames transmitted concurrently (e.g., see paragraph 0034 regarding broadcast).

Regarding claims 18 and 35, as discussed above Gilhousen teaches data have distinct VLO codes (e.g., see col. 11, line 29 – col. 12, line 65). Also as discussed above, the teachings of Gilhousen provide a technique for enabling orthogonal coexistence of high and low data rate communications for increased system efficiency (e.g., see col. 2, line 45 – col. 3, line 30). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the teachings of Gilhousen to the system of Vanderaar, whereby information data rates are adjusted in response to received link margin estimates, in order to enable orthogonal coexistence of high and low data rate communications for increased system efficiency. Further, while Vanderaar in view of Gilhousen may not specifically disclose broadcast data have substantially the same signal strength, these claims were rejected in the previous office action by the Examiner taking official notice that the limitations recited in these claims are well known in the art. That is, it is well known in the art of mobile communications for broadcast data to have substantially

the same signal strength. In Applicant's response to the previous office action, Applicant has not traversed the Examiner's assertion of official notice or Applicant's traverse is not adequate. Therefore, in accordance with MPEP 2144.03(C), the limitations recited in these claims comprise well-known art and are hereafter taken to be admitted prior art. Accordingly, at the time of the invention it would have been obvious to one of ordinary skill in the art to implement the broadcast data to have substantially the same signal strength since it is well known in the art of mobile communications for broadcast data to have substantially the same signal strength.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Articles by Lee et al. entitled, "The Internet Protocol version 6", IEEE April 1998, and "The Next Generation of the Internet: Aspects of the Internet Protocol Version 6", IEEE January 1998, disclose characteristics of IP packets known in the art.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin M Philpott whose telephone number is 571.272.3162. The examiner can normally be reached on M-F, 9:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy D Vu can be reached on 571.272.3155. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Justin M Philpott

ALPUS H. HSU
PRIMARY EXAMINER